

## **RAW SEQUENCE LISTING**

**The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) no errors detected.**

Application Serial Number: 10/801,487A  
Source: IFcu/b  
Date Processed by STIC: 6/6/06

***ENTERED***



IFW16

**RAW SEQUENCE LISTING** DATE: 06/06/2006  
**PATENT APPLICATION:** US/10/801,487A **TIME:** 08:19:57

Input Set : A:\00281FUS.txt  
Output Set: N:\CRF4\06062006\J801487A.raw

4 <110> APPLICANT: Yan, Riqiang  
5 Tomasselli, Alfredo G.  
6 Gurney, Mark E.  
7 Emmons, Thomas L.  
8 Bienkowski, Mike J.  
9 Heinrikson, Robert L.  
11 <120> TITLE OF INVENTION: SUBSTRATES AND ASSAYS FOR BETA-SECRETASE ACTIVITY  
13 <130> FILE REFERENCE: 29915/00281FUS  
15 <140> CURRENT APPLICATION NUMBER: 10/801,487A  
16 <141> CURRENT FILING DATE: 2004-03-16  
18 <150> PRIOR APPLICATION NUMBER: 09/908,943  
19 <151> PRIOR FILING DATE: 2001-07-19  
21 <150> PRIOR APPLICATION NUMBER: 60/219,795  
22 <151> PRIOR FILING DATE: 2000-07-19  
24 <160> NUMBER OF SEQ ID NOS: 199  
26 <170> SOFTWARE: PatentIn Ver. 2.0  
28 <210> SEQ ID NO: 1  
29 <211> LENGTH: 2070  
30 <212> TYPE: DNA  
31 <213> ORGANISM: Homo sapiens  
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36 ctgcggctgc cccgggagac cgacgaagag cccgaggagc cccggccggag gggcagctt 180  
37 gtggagatgg tggacaacct gagggggcaag tcggggcagg gctactacgt ggagatgacc 240  
38 gtgggcagcc ccccgagac gctcaacatc ctgggtggata cagggcagcag taactttgca 300  
39 gtgggtgctg ccccccaccc cttcctgcat cgctactacc agaggcagct gtccagcaca 360  
40 taccgggacc tccggaaaggg tgttatgtg ccctacaccc agggcaagtg ggaaggggag 420  
41 ctgggcaccc acctgttaag catccccat ggcccaacg tcactgtgc tgccaacatt 480  
42 gctgccatca ctgaatcaga caagttttc atcaacggct ccaactggaa aggcatcctg 540  
43 gggctggcct atgctgagat tgccaggcct gacgactccc tggagcctt ctttgactct 600  
44 ctgttaaagc agaccacagt tcccaaccc ttctccctgc acctttgtgg tgctggcttc 660  
45 cccctaacc agtctgaagt gctggcctct gtcggaggaa gcatgatcat tggaggtatc 720  
46 gaccactcgc tgtacacagg cagtctctgg tatacaccca tccggcggga gtggattat 780  
47 gaggtcatca ttgtcggtt ggagatcaat ggacaggatc taaaatggaa ctgcaaggag 840  
48 tacaactatg acaagagcat tgtggacagt ggcaccacca accttcgttt gcccaagaaa 900  
49 gtgttgaag ctgcagtcaa atccatcaag gcagccctt ccacggagaa gttccctgat 960  
50 ggtttctggc taggagagca gtcgggtgtc tggcaaggag gcaccacccc ttggAACATT 1020  
51 ttcccagtca tctcactcta cctaattgggt gaggtacca accagtcctt ccgcattcacc 1080  
52 atccctccgc agcaataacct gcggccagtg gaagatgtgg ccacgtccca agacgactgt 1140  
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PPR 6-7

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56 gaagactgtg gctacaacat tccacagaca gatgagtcaa ccctcatgac cataggctat 1380  
 57 gtcatggctg ccatctgcgc cctttcatg ctgccactct gcctcatggt gtgtcagtgg 1440  
 58 cgctgcctcc gctgcctgcg ccagcagcat gatgacttgc ctgatgacat ctccctgctg 1500  
 59 aagtggaggag gccccatgggc agaagataga gattcccctg gaccacaccc ctgggttca 1560  
 60 ctttggtcac aagttaggaga cacagatggc acctgtggcc agagcaccc aggaccctcc 1620  
 61 ccacccacca aatgcctctg ccttgatgga gaaggaaaag gctggcaagg tgggttccag 1680  
 62 ggactgtacc tgttaggaaac agaaaagaga agaaaagaagc actctgctgg cgggaatact 1740  
 63 cttggtcacc tcaaatttaa gtcgggaaat tctgctgctt gaaacttcag ccctgaacct 1800  
 64 ttgtccacca ttccctttaaa ttctccaacc caaatgttcc ttcttttctt agtttcagaa 1860  
 65 gtactggcat cacacgcagg ttaccttggc gtgtgtccct gtggtaccct ggcagagaag 1920  
 66 agaccaagct tgttccctg ctggccaaag tcagtaggag aggatgcaca gtttgctatt 1980  
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 68 attaaaaaaaaaaaaaaa aaaaaaaaaaaa 2070  
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 71 <211> LENGTH: 501  
 72 <212> TYPE: PRT  
 73 <213> ORGANISM: Homo sapiens  
 75 <400> SEQUENCE: 2  
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 77 1 5 10 15  
 79 Leu Pro Ala His Gly Thr Gln His Gly Ile Arg Leu Pro Leu Arg Ser  
 80 20 25 30  
 82 Gly Leu Gly Gly Ala Pro Leu Gly Leu Arg Leu Pro Arg Glu Thr Asp  
 83 35 40 45  
 85 Glu Glu Pro Glu Glu Pro Gly Arg Arg Gly Ser Phe Val Glu Met Val  
 86 50 55 60  
 88 Asp Asn Leu Arg Gly Lys Ser Gly Gln Gly Tyr Tyr Val Glu Met Thr  
 89 65 70 75 80  
 91 Val Gly Ser Pro Pro Gln Thr Leu Asn Ile Leu Val Asp Thr Gly Ser  
 92 85 90 95  
 94 Ser Asn Phe Ala Val Gly Ala Ala' Pro His Pro Phe Leu His Arg Tyr  
 95 100 105 110  
 97 Tyr Gln Arg Gln Leu Ser Ser Thr Tyr Arg Asp Leu Arg Lys Gly Val  
 98 115 120 125  
 100 Tyr Val Pro Tyr Thr Gln Gly Lys Trp Glu Gly Glu Leu Gly Thr Asp  
 101 130 135 140  
 103 Leu Val Ser Ile Pro His Gly Pro Asn Val Thr Val Arg Ala Asn Ile  
 104 145 150 155 160  
 106 Ala Ala Ile Thr Glu Ser Asp Lys Phe Phe Ile Asn Gly Ser Asn Trp  
 107 165 170 175  
 109 Glu Gly Ile Leu Gly Leu Ala Tyr Ala Glu Ile Ala Arg Pro Asp Asp  
 110 180 185 190  
 112 Ser Leu Glu Pro Phe Phe Asp Ser Leu Val Lys Gln Thr His Val Pro  
 113 195 200 205  
 115 Asn Leu Phe Ser Leu His Leu Cys Gly Ala Gly Phe Pro Leu Asn Gln  
 116 210 215 220  
 118 Ser Glu Val Leu Ala Ser Val Gly Gly Ser Met Ile Ile Gly Gly Ile  
 119 225 230 235 240  
 121 Asp His Ser Leu Tyr Thr Gly Ser Leu Trp Tyr Thr Pro Ile Arg Arg

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**Output Set: N:\CRF4\06062006\J801487A.raw**

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124	Glu Trp Tyr Tyr Glu Val Ile Ile Val Arg Val Glu Ile Asn Gly Gln		
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127	Asp Leu Lys Met Asp Cys Lys Glu Tyr Asn Tyr Asp Lys Ser Ile Val		
128	275	280	285
130	Asp Ser Gly Thr Thr Asn Leu Arg Leu Pro Lys Lys Val Phe Glu Ala		
131	290	295	300
133	Ala Val Lys Ser Ile Lys Ala Ala Ser Ser Thr Glu Lys Phe Pro Asp		
134	305	310	315
136	Gly Phe Trp Leu Gly Glu Gln Leu Val Cys Trp Gln Ala Gly Thr Thr		
137	325	330	335
139	Pro Trp Asn Ile Phe Pro Val Ile Ser Leu Tyr Leu Met Gly Glu Val		
140	340	345	350
142	Thr Asn Gln Ser Phe Arg Ile Thr Ile Leu Pro Gln Gln Tyr Leu Arg		
143	355	360	365
145	Pro Val Glu Asp Val Ala Thr Ser Gln Asp Asp Cys Tyr Lys Phe Ala		
146	370	375	380
148	Ile Ser Gln Ser Ser Thr Gly Thr Val Met Gly Ala Val Ile Met Glu		
149	385	390	395
151	Gly Phe Tyr Val Val Phe Asp Arg Ala Arg Lys Arg Ile Gly Phe Ala		
152	405	410	415
154	Val Ser Ala Cys His Val His Asp Glu Phe Arg Thr Ala Ala Val Glu		
155	420	425	430
157	Gly Pro Phe Val Thr Leu Asp Met Glu Asp Cys Gly Tyr Asn Ile Pro		
158	435	440	445
160	Gln Thr Asp Glu Ser Thr Leu Met Thr Ile Ala Tyr Val Met Ala Ala		
161	450	455	460
163	Ile Cys Ala Leu Phe Met Leu Pro Leu Cys Leu Met Val Cys Gln Trp		
164	465	470	475
166	Arg Cys Leu Arg Cys Leu Arg Gln Gln His Asp Asp Phe Ala Asp Asp		
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170	500		
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181	ctgcggctgc cccgggagac cgacgaagag cccgaggagc ccggccggag gggcagctt 180		
182	gtggagatgg tggacaacct gaggggcaag tcggggcagg gctactacgt ggagatgacc 240		
183	gtgggcagcc cccgcagac gctcaacatc ctggtgata cagggcagcag taactttgca 300		
184	gtgggtgtcg ccccccaccc ctgcctgtcat cgctactacc agaggcagct gtccagcaca 360		
185	tacggggacc tccgaaagggt tggatgttgc ccctacaccc agggcaagtg ggaaggggag 420		
186	ctgggcaccc acctggtaag catccccat ggccccaacg tcactgtgcg tgccaaacatt 480		
187	gctgccatca ctgaatcaga caagttttc atcaacggct ccaactggga aggcacccctg 540		
188	gggctggcct atgctgagat tgccaggctt tggatgtcg gcttcccccct caaccaggat 600		
189	gaagtgtcg cctctgtcg aggagcatg atcattggag gtatcgacca ctcgctgtac 660		

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**Output Set: N:\CRF4\06062006\J801487A.raw**

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 191 cgggtggaga tcaatggaca gatatcgaaa atggactgca aggagtacaa ctatgacaag 780  
 192 agcattgtgg acagtggcac caccacccctt cgtttccccca agaaagtgtt tgaagctgca 840  
 193 gtcaaatcca tcaaggcagc ctccctccacg gagaagttcc ctgatgggtt ctggcttagga 900  
 194 gagcagctgg tgtgtggca agcaggcacc acccccttggg acatttccc agtcatctca 960  
 195 ctctacctaa tgggtgaggt taccacccag tccttccgc tcaccatctt tccgcagcaa 1020  
 196 tacctgcggc cagtggaga tggccacg tcccaagacg actgttacaa gttgccatc 1080  
 197 tcacagtcat ccacgggcac tggttatggg gctgttatca tggagggtt ctacgttg 1140  
 198 ttgatcggtt cccgaaaacg aattggctt gctgtcagcg ctggccatgt gcacgatgag 1200  
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 202 ctgcgccagc agcatgatga ctttgcgtat gacatctccc tgctgaagtg aggaggccca 1440  
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 204 ggagacacag atggcacctg tggccagagc acctcaggac cctcccccacc caccataatgc 1560  
 205 ctctgcctt atggagaagg aaaaggctgg caaggtgggt tccaggact gtacctgttag 1620  
 206 gaaacagaaa agagaagaaa gaagcactt gctggcgaaa atactcttgg tcacccctaaa 1680  
 207 tttaagtctgg gaaattctgc tgcttgcac ttcagccctg aaccccttgc caccattct 1740  
 208 ttaattctc caacccaaag tattttttt ttcttagttt cagaagtact ggcacatcac 1800  
 209 gcaggttacc ttggcgtgtg tccctgtggt accctggcag agaagagacc aagcttgg 1860  
 210 ccctgctggc caaagtcaatggaggat gcacagtttgc tattttgtt tagagacagg 1920  
 211 gactgtataa acaagcctaa cattggtgc aagattgcctt ctggaaaaaaa aaaaaaaaaa 1977  
 213 <210> SEQ ID NO: 4  
 214 <211> LENGTH: 476  
 215 <212> TYPE: PRT  
 216 <213> ORGANISM: Homo sapiens  
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 220 1 5 10 15  
 222 Leu Pro Ala His Gly Thr Gln His Gly Ile Arg Leu Pro Leu Arg Ser  
 223 20 25 30  
 225 Gly Leu Gly Gly Ala Pro Leu Gly Leu Arg Leu Pro Arg Glu Thr Asp  
 226 35 40 45  
 228 Glu Glu Pro Glu Glu Pro Gly Arg Arg Gly Ser Phe Val Glu Met Val  
 229 50 55 60  
 231 Asp Asn Leu Arg Gly Lys Ser Gly Gln Gly Tyr Tyr Val Glu Met Thr  
 232 65 70 75 80  
 234 Val Gly Ser Pro Pro Gln Thr Leu Asn Ile Leu Val Asp Thr Gly Ser  
 235 85 90 95  
 237 Ser Asn Phe Ala Val Gly Ala Ala Pro His Pro Phe Leu His Arg Tyr  
 238 100 105 110  
 240 Tyr Gln Arg Gln Leu Ser Ser Thr Tyr Arg Asp Leu Arg Lys Gly Val  
 241 115 120 125  
 243 Tyr Val Pro Tyr Thr Gln Gly Lys Trp Glu Gly Glu Leu Gly Thr Asp  
 244 130 135 140  
 246 Leu Val Ser Ile Pro His Gly Pro Asn Val Thr Val Arg Ala Asn Ile  
 247 145 150 155 160  
 249 Ala Ala Ile Thr Glu Ser Asp Lys Phe Phe Ile Asn Gly Ser Asn Trp  
 250 165 170 175

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252 Glu Gly Ile Leu Gly Leu Ala Tyr Ala Glu Ile Ala Arg Leu Cys Gly  
253 180 185 190  
255 Ala Gly Phe Pro Leu Asn Gln Ser Glu Val Leu Ala Ser Val Gly Gly  
256 195 200 205  
258 Ser Met Ile Ile Gly Gly Ile Asp His Ser Leu Tyr Thr Gly Ser Leu  
259 210 215 220  
261 Trp Tyr Thr Pro Ile Arg Arg Glu Trp Tyr Tyr Glu Val Ile Ile Val  
262 225 230 235 240  
264 Arg Val Glu Ile Asn Gly Gln Asp Leu Lys Met Asp Cys Lys Glu Tyr  
265 245 250 255  
267 Asn Tyr Asp Lys Ser Ile Val Asp Ser Gly Thr Thr Asn Leu Arg Leu  
268 260 265 270  
270 Pro Lys Lys Val Phe Glu Ala Ala Val Lys Ser Ile Lys Ala Ala Ser  
271 275 280 285  
273 Ser Thr Glu Lys Phe Pro Asp Gly Phe Trp Leu Gly Glu Gln Leu Val  
274 290 295 300  
276 Cys Trp Gln Ala Gly Thr Thr Pro Trp Asn Ile Phe Pro Val Ile Ser  
277 305 310 315 320  
279 Leu Tyr Leu Met Gly Glu Val Thr Asn Gln Ser Phe Arg Ile Thr Ile  
280 325 330 335  
283 Leu Pro Gln Gln Tyr Leu Arg Pro Val Glu Asp Val Ala Thr Ser Gln  
284 340 345 350  
286 Asp Asp Cys Tyr Lys Phe Ala Ile Ser Gln Ser Ser Thr Gly Thr Val  
287 355 360 365  
289 Met Gly Ala Val Ile Met Glu Gly Phe Tyr Val Val Phe Asp Arg Ala  
290 370 375 380  
292 Arg Lys Arg Ile Gly Phe Ala Val Ser Ala Cys His Val His Asp Glu  
293 385 390 395 400  
295 Phe Arg Thr Ala Ala Val Glu Gly Pro Phe Val Thr Leu Asp Met Glu  
296 405 410 415  
298 Asp Cys Gly Tyr Asn Ile Pro Gln Thr Asp Glu Ser Thr Leu Met Thr  
299 420 425 430  
301 Ile Ala Tyr Val Met Ala Ala Ile Cys Ala Leu Phe Met Leu Pro Leu  
302 435 440 445  
304 Cys Leu Met Val Cys Gln Trp Arg Cys Leu Arg Cys Leu Arg Gln Gln  
305 450 455 460  
307 His Asp Asp Phe Ala Asp Asp Ile Ser Leu Leu Lys  
308 465 470 475  
311 <210> SEQ ID NO: 5  
312 <211> LENGTH: 14  
313 <212> TYPE: PRT  
314 <213> ORGANISM: Artificial Sequence  
316 <220> FEATURE:  
317 <223> OTHER INFORMATION: Description of Artificial Sequence: synthetic  
318 peptide sequence  
320 <400> SEQUENCE: 5  
321 Lys Val Glu Ala Asn Tyr Glu Val Glu Gly Glu Arg Lys Lys  
322 1 5 10  
325 <210> SEQ ID NO: 6

RAW SEQUENCE LISTING ERROR SUMMARY                   DATE: 06/06/2006  
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Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:13; Xaa Pos. 7  
Seq#:15; Xaa Pos. 4,7  
Seq#:16; Xaa Pos. 1,4,5,6,7  
Seq#:17; Xaa Pos. 1,2,4,5,6,7  
Seq#:18; Xaa Pos. 1,2,4,5,6,7  
Seq#:21; Xaa Pos. 5  
Seq#:27; Xaa Pos. 7,19  
Seq#:28; Xaa Pos. 6,7,11,20  
Seq#:41; Xaa Pos. 9  
Seq#:49; Xaa Pos. 1  
Seq#:50; Xaa Pos. 2  
Seq#:51; Xaa Pos. 3  
Seq#:52; Xaa Pos. 4  
Seq#:53; Xaa Pos. 5  
Seq#:54; Xaa Pos. 6  
Seq#:55; Xaa Pos. 7  
Seq#:56; Xaa Pos. 8  
Seq#:57; Xaa Pos. 1  
Seq#:58; Xaa Pos. 2  
Seq#:59; Xaa Pos. 3  
Seq#:60; Xaa Pos. 4  
Seq#:61; Xaa Pos. 5  
Seq#:62; Xaa Pos. 6  
Seq#:63; Xaa Pos. 7  
Seq#:64; Xaa Pos. 8  
Seq#:65; Xaa Pos. 1  
Seq#:66; Xaa Pos. 2  
Seq#:67; Xaa Pos. 3  
Seq#:68; Xaa Pos. 4  
Seq#:69; Xaa Pos. 5  
Seq#:70; Xaa Pos. 6  
Seq#:71; Xaa Pos. 7  
Seq#:72; Xaa Pos. 8  
Seq#:73; Xaa Pos. 1  
Seq#:74; Xaa Pos. 2  
Seq#:75; Xaa Pos. 3  
Seq#:76; Xaa Pos. 4  
Seq#:77; Xaa Pos. 7  
Seq#:78; Xaa Pos. 8  
Seq#:79; Xaa Pos. 8  
Seq#:80; Xaa Pos. 9  
Seq#:81; Xaa Pos. 1,7  
Seq#:82; Xaa Pos. 2,7  
Seq#:83; Xaa Pos. 3,7

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PATENT APPLICATION: US/10/801,487A               TIME: 08:19:58

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Seq#:84; Xaa Pos. 4,7  
Seq#:85; Xaa Pos. 5,7  
Seq#:86; Xaa Pos. 6,7  
Seq#:87; Xaa Pos. 7  
Seq#:88; Xaa Pos. 7,8  
Seq#:89; Xaa Pos. 1  
Seq#:90; Xaa Pos. 1,2

## VERIFICATION SUMMARY

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Input Set : A:\00281FUS.txt

Output Set: N:\CRF4\06062006\J801487A.raw

L:438 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:13 after pos.:0  
L:476 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:15 after pos.:0  
L:500 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:16 after pos.:0  
L:524 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:17 after pos.:0  
L:548 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:18 after pos.:0  
L:595 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:21 after pos.:0  
L:695 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27 after pos.:0  
M:341 Repeated in SeqNo=27  
L:731 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:28 after pos.:0  
M:341 Repeated in SeqNo=28  
L:928 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:41 after pos.:0  
L:1045 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:49 after pos.:0  
L:1064 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:50 after pos.:0  
L:1083 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:51 after pos.:0  
L:1102 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:52 after pos.:0  
L:1121 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:53 after pos.:0  
L:1140 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:54 after pos.:0  
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L:1197 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:57 after pos.:0  
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L:1235 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:59 after pos.:0  
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L:1635 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:80 after pos.:0  
L:1659 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:81 after pos.:0  
L:1683 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:82 after pos.:0  
L:1707 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:83 after pos.:0  
L:1731 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:84 after pos.:0  
L:1755 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:85 after pos.:0

**VERIFICATION SUMMARY**

PATENT APPLICATION: US/10/801,487A

DATE: 06/06/2006

TIME: 08:19:58

Input Set : A:\00281FUS.txt

Output Set: N:\CRF4\06062006\J801487A.raw

L:1779 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:86 after pos.:0

L:1798 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:87 after pos.:0